

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Brian Tierney <i>et al.</i>	)	For: Electroluminescent Device
	)	Comprising A Cross-Linked Hole
	)	Transporting And Electron Blocking
Serial No. 10/549,462	)	Material
	)	
Filed: March 19, 2004 (Int'l. Appl.	)	Group Art Unit: 2815
No. PCT/GB2004/001209)	)	
	)	Examiner: Anthony Ho

Confirmation No. 8353

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The applicants hereby request that a panel of examiners formally review the legal and factual bases of the rejections in the above-referenced application prior to the filing of an appeal brief. The applicants respectfully submit that the rejections are legally and factually inadequate for the reasons concisely described herein.

The anticipation/obviousness rejections of all examined claims 1-17 and 25-32 are legally and factually inadequate, and a proper analysis was not performed. In particular, the stated reasoning advanced by the Office for making and upholding the proposed rejections is flawed. Specifically, the Office has failed to acknowledge the structural differences between a polymeric material and a cross-linked polymeric material (i.e., the cross-linked hole transporting and electron blocking material recited in all examined claims) and the benefits observed by the applicants flowing from same.

Submitted herewith is a Notice of Appeal.

**CLAIM REJECTIONS**

Claims 1-32 are pending, but claims 18-24 have been withdrawn. Claims 1, 2, 5-16 and 25-32 stand rejected as anticipated by, or in the alternative, as obvious over U.S. Patent Publication No. 2001/0026878 to Woo et al. ("Woo"). Claims 1, 2, 4, 10, and 15-17 stand rejected as anticipated by, or in the alternative, as obvious over

International Patent Publication No. WO 02/31896 Periyasamy et al. (“Periyasamy”). Claims 1-4 and 17 stand rejected as anticipated by, or in the alternative, as obvious over European Patent Publication No. EP 1220341 to Naito (“Naito”).

With respect to each of the applied references Woo, Periyasamy, and Naito, the Office misconstrued the various materials disclosed therein as meeting the “*cross-linked* hole transporting and electron blocking material” limitation recited by all examined claims 1-17 and 25-32. When explaining its reasoning, the Office asserted:

the applied prior arts (sic) of record discloses (sic) using the same material as in the present application for the hole transporting and electron blocking material. Since the materials are the same, then the materials used in the applied prior arts (sic) of record are as much ‘cross-linked’ as the material being claimed in the present application.

*See* advisory action dated January 30, 2008, at page 2.

In response, the applicants respectfully submit that the examiner’s assertion that ‘the materials are the same’ is without merit; the materials are not the same. All examined claims 1-17 and 25-32 recite a “*cross-linked* hole transporting and electron blocking material” whereas the references disclose polymers that have not been cross-linked and that do not comprise cross-linkable groups. The “cross-linkable groups” referenced by the examiner in the Response to arguments section (*see* page 7 of the final action dated November 19, 2007) are merely groups capable of undergoing chain extension (i.e., polymerization). The groups are not cross-linkable groups, and thus are not capable of forming cross-linked polymers. Accordingly, the applied art does not disclose or suggest a “*cross-linked* hole transporting and electron blocking material,” as recited by all examined claims 1-17 and 25-32.

Cross-linked polymers comprise cross-linking bonds which connect one polymer chain to another. Cross-linking of polymers results in a different chemical structure (relative to the original uncross-linked polymer) and different physical properties (relative to the original uncross-linked polymer). As evidence, the applicants point to cross-linked (or vulcanized) rubber. The cross-linked structure of the claimed hole transporting and electron blocking material is *advantageous* for manufacturing, for example, by facilitating deposition of an organic semiconducting material directly from solution thereupon — without causing dissolution of the

underlying hole transporting and electron blocking material. Thus, intermixing of the organic semiconducting material and the hole transporting and electron blocking material is avoided. *See* the paragraph bridging pages 13 and 14 of the application. In contrast, the (non-cross-linked) hole transport layers of each of the cited prior art disclosures are susceptible to such intermixing.

**CONCLUSION**

In view of the foregoing, it is respectfully submitted that all pending claims 1-17 and 25-32 should be allowed.

Respectfully submitted,

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